

Appl. No. 10/848,747
Amdt. dated Oct. 29, 2004
Reply to office action of July 30, 2004

Amendments to the Drawings:

The attached sheet of drawings includes changes to FIGS. 1 and 4. This sheet, which includes Figs. 1, 2, and 4, replaces the original sheet including Figs 1, 2, and 4.

Attachment: Replacement Sheet

Annotated Sheet Showing Changes

REMARKS/ARGUMENTS

Re-examination and favorable reconsideration in light of the above amendments and the following comments are respectfully requested.

Claims 19, 21 - 24, 26, and 27 are pending in the application. Currently, no claim has been allowed.

By the present amendment, claims 19, 22 - 24, 26, and 27 have been amended and new claims 28 - 37 have been added to the application.

In the office action mailed July 30, 2004, the Examiner raised several objections to the drawings. With respect to FIG. 4, Applicants had previously presented a drawing correction with the Preliminary Amendment which was filed in this case. Not knowing whether this Amendment has gone astray, Applicants enclose herein a replacement sheet of drawings containing corrections to both FIGS. 1 and 4. The Examiner is hereby requested to approve the drawing corrections.

Further, in said office action, claims 19 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,500,565 to Usui; claims 21 - 23, 26, and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Usui in view of U.S. Patent No. 5,595,831 to Clark; claim 24 was rejected under 35 U.S.C. 103(a) as being unpatentable over Usui

in view of U.S. Patent No. 6,040,054 to Odashima; claims 19, 21 - 23, 26, and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent No. 3,808,031 to Brill-Edwards; and claim 24 was rejected under 35 U.S.C. 103(a) as being unpatentable over Usui in view of Brill-Edwards.

The foregoing rejections are traversed by the instant response.

Claim 19 has been amended to say that the substrate is formed from a deoxidized low carbon steel material and a coating having a first layer formed from nickel or a nickel alloy applied to said at least one surface (of said substrate) and a second layer formed from zinc applied over said first layer, said first layer having zinc atoms diffused therein. It is submitted that Usui never teaches or suggests a component having such features. Usui relates a steel tube having a zinc or a zinc-nickel layer formed on an outer circumferential surface of the steel tube and a chromate film formed on the zinc or zinc-nickel layer. It does not teach or suggest forming the tube from a deoxidized low carbon steel material and/or providing a coating having the claimed layers. Clearly, Usui does not teach or suggest diffusing zinc atoms into a first layer formed from nickel or a nickel alloy.

With regard to the Examiner's position about the use of low carbon steel, the Examiner has not provided anything which would teach or suggest using this material in Usui's environment. Nor has the Examiner set forth any reason why one of ordinary skill in the art would be motivated to use such a material. One could expect success out of forming the tube from a copper material. It is submitted that the Examiner's position is nothing more than a hindsight rejection.

With regard to the rejection over Usui and Clark, claims 21 – 23 are allowable because Clark does not cure the aforesaid deficiencies of Usui. It should be noted that the outer layer in Clark is a NiZn layer, not a zinc layer. With respect to claim 26, neither reference teaches or suggests the use of a low carbon steel as a substrate. Further, neither reference teaches or suggests a coating having a first layer formed from a nickel alloy deposited on and in contact with a surface of said substrate and a second layer formed from zinc deposited on said first layer and said first layer having zinc atoms diffused therein. With respect to claim 27, neither reference teaches or suggests the method steps of providing a substrate formed from a low carbon steel; forming a nickel alloy coating layer on said substrate; applying a layer of zinc over said nickel alloy

coating layer; and diffusing the zinc into said nickel alloy coating layer.

With respect to the rejection of claim 24 over Usui and Odashima, claim 24 is allowable for the same reasons that claim 19 and 23 are allowable. Odashima does not cure the above noted deficiencies of Usui.

With respect to the rejection of claims 19, 21 - 23, 26, and 27 over Brill Edwards, these claims are allowable for the following reasons. Brill Edwards does not teach or suggest forming a substrate from a deoxidized low carbon steel. The rejection of claim 19 fails because it is purely a hindsight rejection. There is nothing cited by the Examiner which would lead one of ordinary skill in the art to form the substrate from a deoxidized low carbon steel. The Examiner offers no reason why one of ordinary skill in the art having Brill Edwards before him would be motivated to make such a substitution. Absent some teaching, suggestion, or motivation, the rejection is defective. Claims 21 - 23 are allowable for the same reasons as claim 19. Claims 26 and 27 are allowable because neither of the cited and applied references teaches or suggests forming the first layer from a nickel alloy. Usui only teaches forming single metal coating layer. Brill Edwards teaches depositing a zinc layer on a nickel layer, not a nickel alloy layer.

With regard to the rejection of claim 24 over Usui in view of Brill Edwards, neither reference teaches using a nickel base alloy selected from the listed group. The fact that the Examiner has taken a position that forming a nickel alloy layer is known does not form a proper basis for an obviousness rejection. There must be some teaching, suggestion or motivation for making such a substitution given the fact that Brill Edwards is clear that he wants to use a nickel layer. The comments about Odashima are noted; however, Odashima does not teach applying a nickel alloy layer to a steel substrate and then coating it with a zinc layer and subjecting the nickel alloy layer to a diffusion treatment.

New claims 28 - 37 are allowable because none of the cited and applied references teach or suggest their subject matter.

An amendment has been made to page 1 of the specification to update the status of Applicants' parent application.

For the foregoing reasons, the instant application is believed to be in condition for allowance. Such allowance is respectfully solicited.

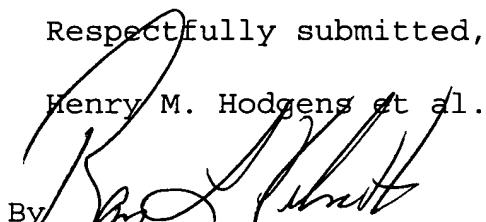
Should the Examiner believe an additional amendment is needed to place the case in condition for allowance, he is hereby invited to contact Applicants' attorney at the telephone number listed below.

No fee is believed to be due as a result of this response.

Should the Commissioner determine that a fee is due, he is hereby authorized to charge said fee to Deposit Account No. 21-0279.

Respectfully submitted,

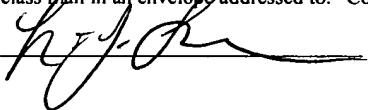
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Date: October 29, 2004

I, Lori Larson, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on October 29, 2004.



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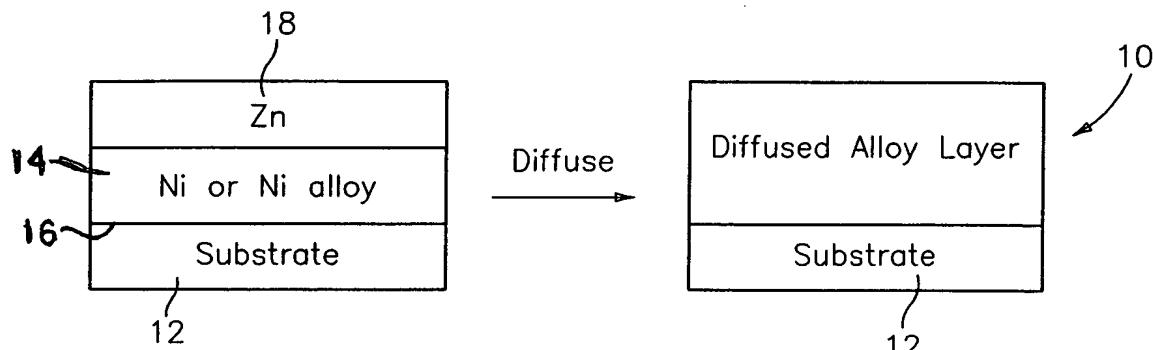


FIG. 1

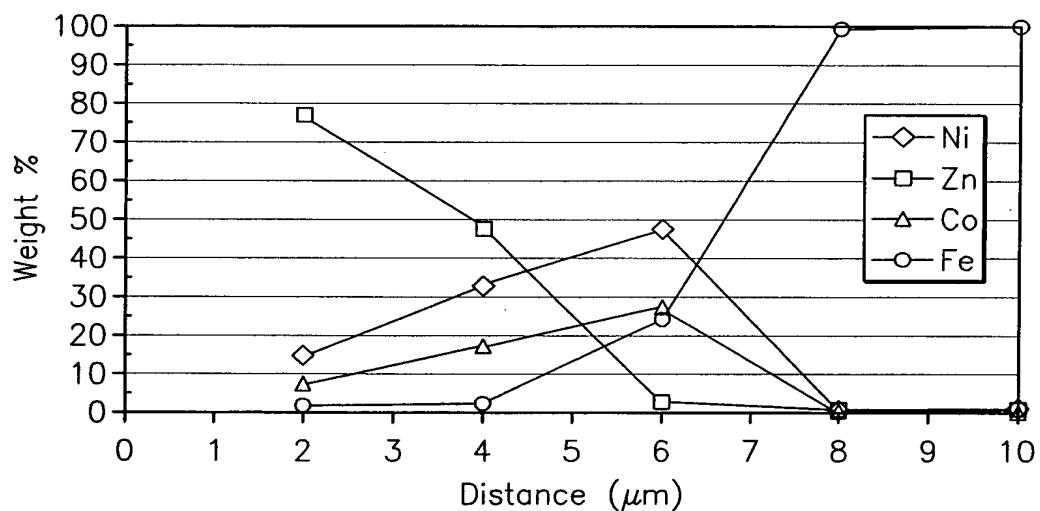


FIG. 2

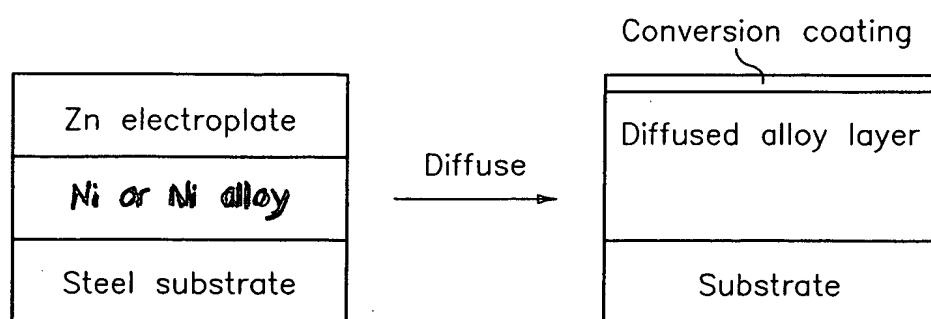


FIG. 4